TIME SERIES ANALYSIS OF SUGAR PRODUCTION IN CENTRAL AZUCARERA DON PEDRO IN NASUGBU, BATANGAS

Undergraduate Thesis
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ABSTRACT

SANCHEZ, NISHI JOY MAGTAAS, Time Series Analysis of Sugar Production in Central Azucarera Don Pedro in Nasugbu, Batangas. Special Problem. Bachelor of Science in Applied Mathematics (with specialization in Statistics). Cavite State University, Indang, Cavite. March 2013. Adviser: Prof. Analyn A. Mojica.

The study was conducted to determine a model that can be used to forecast the sugar production of Central Azucarera Don Pedro, test the adequacy of the model formulated and provide forecasts of the sugar production of the company. This study aimed to be beneficial to different sectors such as the Central Azucarera Don Pedro Inc. (CADPI), farmers, government, and the future researchers.

The data used in the study were secondary data from the Production Department of Central Azucarera Don Pedro Inc. (CADPI).

Model was selected using time series analysis. The best model for the prediction of the sugar production was selected considering several criteria. Forecasted values for the sugar production for the CADPI for the years 2013-2017 were computed using the formulated model. The estimated model was found out to be $\hat{Z}_t = 1.3986\,Z_{t-1} + 0.2028\,Z_{t-2} - 0.6014\,Z_{t-3} + a_t$ and the forecasted values were 3.6130 million, 3.7735 million, 3.7998 million, 3.9484 million, and 4.0650 million (in 50-kg bag) for the next five years.

The computed Mean Absolute Percentage Error (MAPE) was reliable with value 7.73.